



Wisconsin DNR Fisheries Information Sheet



Stream: Upper Middle Inlet

County: Marinette

Year: 2018

Regulation: Yellow

Size Limit: 8 inches

Daily Limit: 3

The Upper Middle Inlet is a tributary to Middle Inlet Creek and is part of the Middle Inlet watershed located in Marinette County. The watershed is forested and contains some agricultural land but is almost entirely in private ownership. Upper Middle Inlet Creek has a total stream length of 13.5 miles, a surface area of 15.8 acres and an average width of 16 feet.

Trout Unlimited purchased a 48-acre parcel of land between McMahon Road and Highway 141 and donated it to the State of Wisconsin in 1985. This is the only public land located on Upper Middle Inlet Creek. As a result, this section of creek receives a great deal of fishing pressure. Several habitat improvement projects (sand trap, bank covers, instream boulder placement) have been completed within this area. The sand trap was installed in 1983 and is located immediately downstream of the Highway 141 bridge crossing. Bank covers were later added in 1993.

Upper Middle Inlet was sampled on July 17, 2018 to assess the brook and brown trout fisheries. A 0.52-mile section of the creek was sampled between McMahon Road and Highway 141 (T.33N. -R.20E. Section 11) (Figure 1). All brook and brown trout collected were measured to the nearest 0.1-inch total length and weighed before being released.

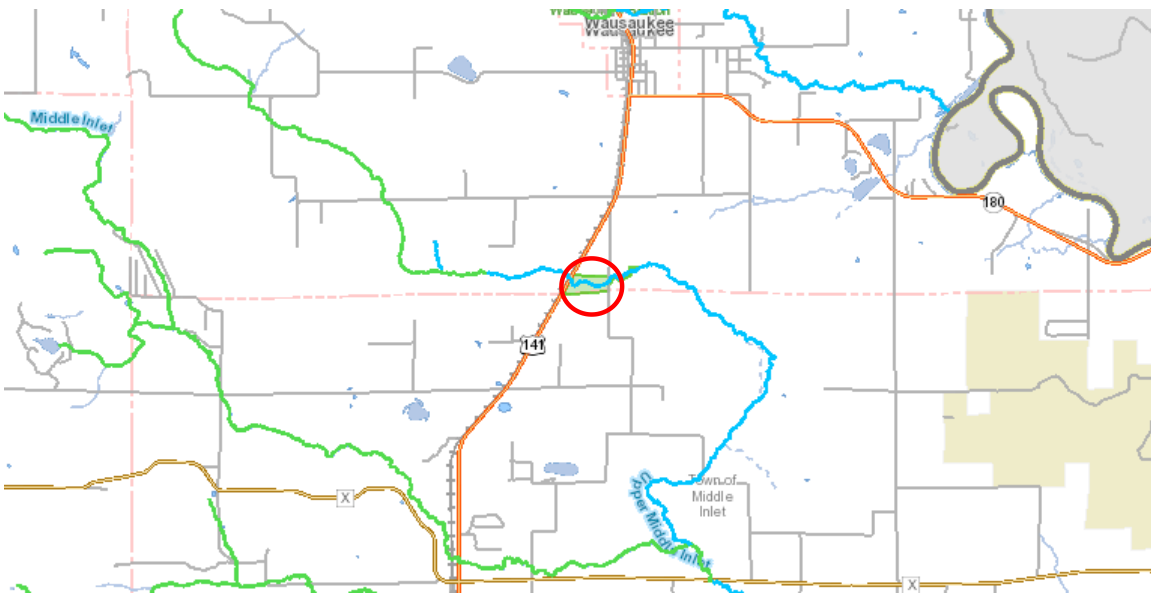


Figure 1. Sampling location on Upper Middle Inlet in Marinette County, WI.

Catch per Unit Effort (CPUE) and Length Frequency

CPUE is a relative abundance index which is often directly related to absolute abundance. Trout fisheries are routinely quantified using CPUE or the number and/or size of trout per mile. CPUE's can be used to compare streams by ecoregion or statewide. This is done by using percentiles (PCTL). For example, if a CPUE is in the 90th PCTL, CPUE is greater than 90% of the CPUE's in that ecoregion or across the state. CPUE percentiles may also be used to categorize trout abundance; 33rd (low abundance), 66th (moderate abundance), 90th (high abundance), and 95th (very high abundance).

The length frequency of trout describes the size structure of the sample or population and is the number of fish captured per 1-inch length group.

BROOK TROUT

A total of 513 brook trout was collected in Upper Middle Inlet in 2018 (Figure 2). Brook trout ranged in length from 1.8 to 15.0 inches and averaged 6.3 inches (Table 1). The number of brook trout collected increased between 2016 and 2018 and size structure improved (Table 1). One hundred seventy-seven young-of-the-year (YOY)/mile were collected in 2016 compared to 335 YOY/mile in 2018 (Table 1). Additionally, 31% of the brook trout collected in 2018 were greater than the 8-inch minimum length limit (MLL).

Overall, total brook trout CPUE and CPUE > 8" has been variable between 2005 and 2018 but increasing over time (Figure 3). In terms of abundance, brook trout CPUE \geq 8 inches was very high in 2018 and is currently around the 100th PCTL compared to other streams in the Northern Lakes and Forests ecoregion (Table 1). The improvement in total CPUE can be attributed to the large number of YOY and age-1 fish collected (Figure 2 & Table 1). Our sampling results in 2018 on Upper Middle Inlet were nearly identical to what was observed in 2012 except for fish >12 inches. More brook trout >12 inches were collected in 2018 than all other years combined (Table 1).

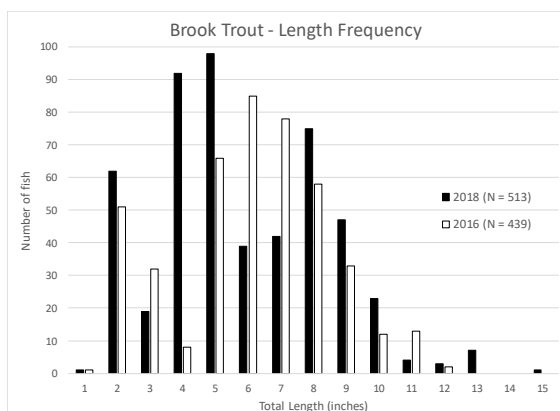


Figure 2. Length frequency of all brook trout collected in Upper Middle Inlet in 2016 and 2018.

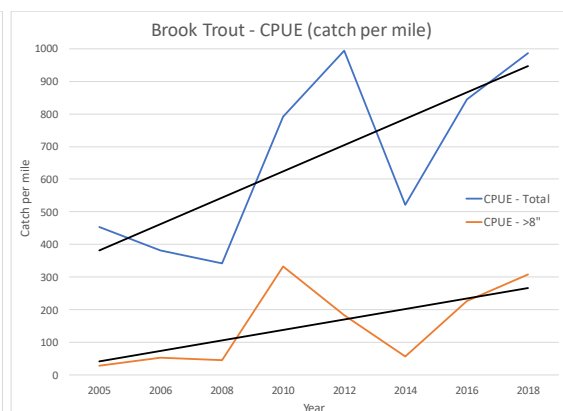


Figure 3. Total CPUE and CPUE of 8" brook trout collected from 2005 through 2018.

Table 1. Brook trout catch per unit effort (CPUE) and percentile (PCTL) by various length groups from 2005 through 2018 in Upper Middle Inlet.

Year	Average Length (in)	Length Range	Number Collected	CPUE = catch per mile (PCTL - percentile)					
				Total (PCTL)	YOY	> 5" (PCTL)	> 8" (PCTL)	> 10" (PCTL)	> 12" (PCTL)
2005	5.4	2.0 - 10.6	235	454 (70)	167	285 (80)	29 (70)	2 (75)	0
2006	6.2	2.0 - 10.6	198	382 (65)	62	319 (80)	52 (85)	2 (75)	0
2008	5.9	2.0 - 11.7	177	342 (60)	79	262 (75)	46 (80)	8 (80)	0
2010	7.5	2.5 - 12.4	412	792 (85)	60	733 (95)	333 (100)	65 (100)	4 (95)
2012	6.2	2.0 - 11.4	517	994 (90)	262	733 (95)	183 (100)	67 (100)	0
2014	5.9	1.8 - 11.6	271	521 (75)	171	350 (85)	56 (85)	13 (90)	0
2016	6.5	1.9 - 12.4	439	844 (85)	177	667 (95)	227 (100)	52 (100)	4 (95)
2018	6.3	1.8 - 15.0	513	987 (89)	335	652 (95)	308 (100)	73 (100)	21 (100)

BROWN TROUT

A total of 8 brown trout was collected in Upper Middle Inlet. Brown trout ranged in length from 5.8 to 17.8 inches and averaged 10.9 inches. The abundance of brown trout in Upper Middle Inlet has historically been low. For example, only 58 brown trout have been collected in 8 surveys between 2005 and 2018. Additionally, no YOY brown trout have ever been collected in Upper Middle Inlet.

DISCUSSION

Overall, the brook trout fishery in Upper Middle Inlet Creek looks great. Anglers will continue to find good numbers of legal-sized brook trout in the immediate future. A good year class of YOY was observed in 2018 (Table 1).

Brown trout have never been a large component of the trout fishery in Upper Middle Inlet. Most brown trout are likely coming from Middle Inlet. However, large fingerling brown trout stocking in Middle Inlet will be discontinued in 2019.

CONCLUSIONS & RECOMMENDATIONS

The trout fishery Upper Middle Inlet is stable and continues to offer anglers an excellent trout fishing opportunity. The current fishing regulation (3 fish daily bag; 8-inch MLL for all trout) will continue to sustain the exceptional brook trout fishery. Therefore, no fishing regulation change is recommended for Upper Middle Inlet.

Questions regarding fisheries management activities for Upper Middle Inlet:

Chip Long, Senior Fisheries Biologist
 Wisconsin Department of Natural Resources
 101 N. Ogden Rd / Suite A
 Peshtigo, WI 54157
 (715) 582-5017
 Email: Christopher.Long@Wisconsin.gov